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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,218	06/26/2003	Anatoly Chekhmir	GRI-101-CON	3717
28970	7590	02/07/2006	EXAMINER	
PILLSBURY WINTHROP SHAW PITTMAN LLP			HERTZOG, ARDITH E	
1650 TYSONS BOULEVARD			ART UNIT	
MCLEAN, VA 22102			PAPER NUMBER	

1754

DATE MAILED: 02/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/606,218

Applicant(s)

CHEKHMIR ET AL.

Examiner

Ardith E. Hertzog

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 9/27 & 29, 2005 and 1/5, 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 21-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 21-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>9/29, 2005</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Amendment & Petition/Information Disclosure Statement/Priority*

1. This action is in response to the "Amendment" filed January 5, 2006. Claims 21-30, per said amendment, are pending. The examiner acknowledges with appreciation applicant's remarks regarding where all claim amendments find support in the originally filed disclosure. Receipt is also acknowledged of applicant's accompanying "Petition Under 37 CFR § 1.84(a)(2)", said petition having not yet been reviewed/decided. Receipt is also acknowledged of the information disclosure statement (IDS) filed September 29, 2005. As the submission is in compliance with the provisions of 37 CFR § 1.97, the IDS has been considered, per the enclosed PTO-1449. Lastly, receipt is acknowledged of papers submitted under 35 U.S.C. § 119(a)-(d) filed September 27, 2005, which papers have been placed of record in the file.
2. **All objections to the drawings—with the exception of color drawing Figure 11, per applicant's *pending* Rule 84(a)(2) petition—as set forth in paragraphs 4.-5. of the prior Office action with mailing date July 5, 2005 (hereinafter "the 7/5/05 action"), have been **overcome** by amendment. **Furthermore**, said petition, **if** granted, would overcome the Figure 11 objections.**
3. The objection to the disclosure, as set forth in paragraph 7. of the 7/5/05 action, has been **overcome** by amendment.

4. The 35 U.S.C. § 112, first paragraph, rejection of claims 21-25, as set forth in paragraph 9. of the 7/5/05 action, has been **withdrawn**, in view of applicant's arguments (see remarks accompanying amendment at p. 11, second paragraph – paragraph bridging pp. 12-13).

5. The 35 U.S.C. § 112, second paragraph, rejection of claims 22 and 25-28, as set forth in paragraph 11. of the 7/5/05 action, has been **overcome** by amendment.

6. The 35 U.S.C. § 102(b) rejection of claims 21-24 as anticipated by US 4,297,304 (Scheffler et al., hereinafter "Scheffler"), as set forth in paragraph 14. of the 7/5/05 action, has been **overcome** by amendment. In particular, Scheffler fails to teach the **specific** immobilizing mineral(s) now **required** by instant independent claim 21; this patent further fails to have suggested using any of these **specific** minerals in the disclosed methods, and the remaining prior art of record provides no teaching or suggestion to have so modified the Scheffler methods. **In addition**, as noted by applicant, "Scheffler does not teach activation of an immobilizing mineral with acid, base, or heat (the pH treatment to which the Examiner cites is a treatment of the waste, **not** the immobilizing mineral)" (see remarks accompanying amendment at p. 15, first paragraph, emphasis added), and thus Scheffler is **not** applicable against applicant's new independent claim 29.

7. The 35 U.S.C. § 102(b) rejection of claims 21-24 as anticipated by US 3,959,172 (Brownell et al., hereinafter "Brownell"), as set forth in paragraph 15. of the 7/5/05 action, has been **overcome** by amendment. In particular, Brownell fails to teach the **specific** immobilizing mineral(s) now **required** by instant independent claim 21; this

patent further fails to have suggested using any of these **specific** minerals in the disclosed processes, and the remaining prior art of record provides no teaching or suggestion to have so modified the Brownell processes. **However**, note that Brownell is considered applicable prior art against applicant's new claims 29-30, as set forth below.

8. The 35 U.S.C. § 102(b) rejection of claims 26-27 as anticipated US 5,656,009 (Feng et al., hereinafter "Feng"), as set forth in paragraph 16. of the 7/5/05 action, has been **overcome** by amendment. In particular, Feng fails to teach the **solid state** reaction now **required** by instant independent claim 26, instead **requiring melting** of the solid waste (per col. 3, lines 27-66, as noted by applicant).

9. The 35 U.S.C. § 102(b)/103(a) rejection of claim 28 based upon the Epelbaum et al. article (hereinafter "Epelbaum"), as set forth in paragraph 17. of the 7/5/05 action, has been **overcome** by amendment. In particular, Epelbaum fails to teach or to have suggested the second and third steps now **clearly required** by instant claim 28—namely:

heating the mixture to a temperature that is above melting point of the rock or glass but below the melting point of the immobilizing mineral, to form a waste integrated mineral; and  
cooling the mixture to result in formation of an effective covering of the waste integrated mineral and formation of a surrounding rock or glass matrix.

Instead, as noted by applicant, Epelbaum teaches that "the overgrown defensive zone [(i.e., the "outer zone (overgrowth) of crystal in equilibrium with other rock-forming minerals")]

has to be formed **before** the melting" (see pp. 126, 137, emphasis added).

***Claim Rejections - 35 U.S.C. § 102***

***&***

***Response to Arguments***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 29-30 are rejected under 35 U.S.C. § 102(b) as anticipated by Brownell.

Brownell teaches processes for encapsulating radionuclides, wherein “radionuclides are immobilized in virtually an insoluble form...” (see abstract). In Example IV, waste oxide slurries are immobilized by mixing same with kaolinite, adding sodium silicate, followed by agitation with heating, so as to convert the kaolinite and sodium silicate into microcrystalline insoluble silicates and complex aluminosilicate. Note that sodium silicate is explicitly taught as an alkaline agent to raise pH (see col. 8, lines 12-19). Thus, in this Brownell example: “an immobilizing mineral” (i.e., kaolinite) is subjected to “activating... by treatment with acid, base or heat” (i.e., the addition of sodium silicate to the kaolinite-containing waste oxide slurry); “the activated immobilizing mineral” is subjected to “contacting... with a solution containing a waste having one or more of radionuclides, hazardous elements, and hazardous components, resulting in a waste integrated immobilizing mineral” (i.e., via agitation of the mixture of the sodium silicate and kaolinite-containing waste oxide slurry, the agitated mixture reading on applicant’s “waste integrated immobilizing mineral”); and “the waste integrated immobilizing

mineral" is subjected to "heating to transform the waste integrated immobilizing mineral to a more stable mineral" (i.e., conversion of the oxides, kaolinite and sodium silicate into microcrystalline insoluble silicates and complex aluminosilicate), thereby forming "a waste product having a waste integrated mineral encapsulated by a surrounding matrix", as summarized in the Brownell abstract (i.e., "a condensed crystal lattice forming a cage structure with the condensed metalo-silicate lattice which completely surrounds the radionuclide and traps the radionuclide therein, thus rendering the radionuclide virtually insoluble" (see second paragraph)). Therefore, as each and every limitation of instant claims 29-30 is taught by Brownell, this reference anticipates same.

12. Applicant's arguments with respect to Brownell, insofar as they pertain to instant claims 29-30, have been fully considered but have not been found persuasive. In the context of instant claim 22, applicant urges that Brownell adds the sodium silicate to the kaolinite **after** it has been mixed with the waste, whereas instant claim 22 now requires "activating the immobilizing mineral, **prior to** said contacting step..." (emphasis added). Such argument cannot be found convincing with respect to instant claims 29-30 however, as they contain no such limitation regarding the sequence of the recited steps.

### ***Double Patenting***

13. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute), so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s), because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In*

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*re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

14. A timely filed terminal disclaimer in compliance with 37 CFR § 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

15. Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR § 3.73(b).

16. Claims 21-30 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-22 and 36-43 of US 6,734,334.

Although the conflicting claims are not identical, they are not considered patentably distinct from each other, for reasons **analogous to** those set forth in paragraph 21. of the 7/5/05 action, said reasons being **expressly incorporated by reference herein**.

17. The terminal disclaimer filed on January 5, 2006 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US 6,734,334 has been reviewed and is **not** accepted. In particular:

18. The person who signed the terminal disclaimer is not recognized as an officer of the assignee, and she has not been established as being authorized to act on behalf of the assignee. See MPEP § 324.

19. An attorney or agent, **not of record**, is not authorized to sign a terminal disclaimer in the capacity as an attorney or agent acting in a representative capacity as provided by 37 CFR § 1.34. See 37 CFR § 1.321(b) and/or (c).



20. As **one way** of rendering the current terminal disclaimer acceptable: It would be acceptable for a person, other than a recognized officer, to sign a terminal disclaimer, **provided** the record for the application includes a statement that the person is empowered to sign terminal disclaimers and/or act on behalf of the organization.

Accordingly, a new terminal disclaimer which includes the above empowerment statement will be considered to be signed by an appropriate official of the assignee. A separately filed paper referencing the previously filed terminal disclaimer and containing a proper empowerment statement would also be acceptable.

21. In any event, it should be noted that applicant is **not** required to pay another disclaimer fee as set forth in 37 CFR § 1.20(d) when submitting a replacement or supplemental terminal disclaimer.

### ***Conclusion***

22. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The newly cited references are considered cumulative to or less material than those previously made of record.

23. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. Applicant is reminded of the extension of time policy as set forth in 37 CFR § 1.136(a).

24. **A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR § 1.136(a) will be**

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**calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.**

25. Any inquiry concerning this communication should be directed to Ardith E.


Hertzog at 571-272-1347. The examiner can normally be reached on Monday through Friday (from about 7:30 a.m. - 3:30 p.m.).

26. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley S. Silverman, can be reached at 571-272-1358. The central fax number for all communications is now 571-273-8300.

27. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. For any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
AEH

February 3, 2006

  
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